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ABSTRACT

This paper describes the Kentucky Department of Education's (KDE's) multi-faceted approach to professional development and provides evidence for its impact on schools' achievement of the Kentucky Education Reform Act (KERA) goals. Data are drawn from the exemplary case study component of a larger research project. Many Kentucky school districts are located in remote rural areas, accessible only by mountain roads. To reach these districts, the KDE relied on a system of nine regional service centers that provided a wide variety of services to districts, schools, and individual teachers. To supplement the work of these centers, KDE developed materials and activities specifically designed to meet the emerging needs of teachers as they worked to achieve KERA goals. All four case study schools exhibited a strong commitment to professional development. They used professional development resources to enhance their instructional programs in areas explicitly connected to KERA, such as curriculum alignment and development of materials and activities keyed to the core content standards. Teachers at each school served in leadership roles in the KDE Division of Portfolio Initiatives professional development activities. Using state resources and opportunities, these schools created extensive professional development programs to suit the specific needs of their teachers and students. Recommendations are given for approaches to professional development that seem to hold promise for facilitating statewide standards-based educational reform efforts. (Contains 11 references.) (SLD)

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College-Level Mathematics Performance and Persistence" (Meihua Zhai and Jennie Skerl); and (23) "The Role of the Institutional Research Office in the Institutional Accreditation Self-Study Process" (Marianthi Zikopoulos and Christopher Hourigan). Each paper contains references. A listing of the conference program and the 1999 association membership roster are included. (Contains 65 tables and 8 figures.) (SLD)

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PROFESSIONAL DEVELOPMENT: A KEY TO KENTUCKY'S REFORM EFFORT[1]

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Abstract

Educational reform leaders generally agree that professional development opportunities for teachers are crucial to the success of any effort to make meaningful, sustainable changes in educational practice. As Fullan (1991) explained, "Continuous development of all teachers is the cornerstone for meaning, improvement, and reform. Professional development and school development are inextricably linked" (p. 315). Kentucky Department of Education (KDE) personnel charged with the responsibility to operationalize the Kentucky Educational Reform Act (KERA) understood this link. They developed an extensive professional development (PD) program to help Kentucky educators achieve the ambitious KERA goals. In this paper we describe the Department's multi-faceted approach to professional development and provide evidence for its impact on schools' achievement of KERA goals. We draw upon data from the exemplary case study component of a larger research project, The Effects of Standards-Based Assessments on Schools and Classrooms.

Perhaps the biggest challenge that KDE faced in providing PD services was geography. Many of Kentucky's school districts are located in remote rural areas, accessible only by mountain roads which are particularly treacherous to travel during the winter months. To reach these districts, KDE relied on a system of nine regional service centers, which provided a wide variety of services to districts, schools, and individual teachers. However, as Ed Reidy, then-Deputy Commissioner of Education, explained, "We have a real commitment that what kids learn should not be a function of geography. . . . You could draw a circle around [the regional service] centers. Most of our audited schools were outside those circles and most were poor." To supplement the work of the centers, KDE developed a variety of materials and activities specifically designed to meet emerging needs of teachers as they worked to achieve KERA goals.

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[1] This research is part of a larger project, The Effects of Standards-Based Assessments on Schools and Classrooms. It is supported in part by the Office of Educational Research and Improvement, through the National Center for Research on Evaluation, Standards, and Student Testing (CRESST). We would like to thank other members of the research team: Shelby Wolf, Monette McIver, Brian Stecher, and Sheila Barron, for their comments on the paper. We extend special thanks to principals and teachers at the four schools that are featured in the paper. Without their support, this project would not have been possible. An earlier version of this paper was presented at the annual meeting of the American Educational Research Association, Montreal, April 1999.

This paper focuses on the two major categories of services—school-based professional development and professional development for mathematics and writing portfolios.

All four case study schools exhibited a strong commitment to professional development and a belief in the importance of ongoing support for teacher learning. They used state PD resources to enhance their instructional programs in areas explicitly connected to KERA, such as curriculum alignment and development of materials and activities keyed to the core content standards. Further, teachers at each school served in leadership roles in the KDE Division of Portfolio Initiatives professional development activities. These teachers saw their leadership roles as benefiting their schools, their students, and their colleagues, as well as supporting their own professional growth. Thus, using state resources and opportunities, these four exemplary schools created extensive professional development programs to suit the specific needs of their teachers and students. Through their successful efforts, they provide an existence proof that Kentucky's approach to professional development can provide the resources needed to support statewide, standards-based educational reform. The paper concludes with recommendations for approaches to professional development that seem to hold promise for facilitating statewide standards-based educational reform efforts.

The Key Role of Professional Development in Educational Reform

The new visions of learning and teaching that underlie educational reform are making profound demands on teachers. The transformation in classroom practice teachers are being challenged to make is one they are unlikely to make without support and guidance (Putnam & Borko, 1997). As a consequence, a number of researchers studying educational reform are calling for increased attention to professional development opportunities for teachers (Cohen & Ball, 1990; Richardson, 1994; Sykes, 1996). As Michael Fullan (1991) explained, "Continuous development of all teachers is the cornerstone for meaning, improvement, and reform. Professional development and school development are inextricably linked" (p. 315).

At the same time, educational scholars and policymakers have noted the inadequacy of existing support for teacher learning. In his article introducing a special section of *Phi Delta Kappan* devoted to professional development and school reform, Gary Sykes (1996) concluded:

> Two judgments frame the contemporary concern for the professional development of teachers. The first reckons that teacher learning must be at the heart of any effort to improve education in our society. While other reforms may be needed, better learning for more children ultimately relies on teachers. . . . The second judgment regards

> conventional professional development as sorely inadequate. . . . The resources devoted to professional development, this judgment charges, are too meager and their deployment too ineffective to matter. These twin observations form the most serious unsolved problem for policy and practice in American education today. . . . [E]fforts to promote teacher learning that will lead to improved practice on a wide scale have yet to emerge. (p. 465)

U.S. Secretary of Education Richard Riley's remarks at the January 28, 1999, National Center for Education Statistics (NCES) press conference announcing release of the report *Teacher Quality: A Report on Teacher Preparation and Qualifications* (U.S. Department of Education, 1999) acknowledged both the importance of assisting teachers in their efforts to comply with the demands of educational reform and the inadequacy of current support:

> Increasingly, educators and policy makers are concluding that we need to focus on both student performance and teacher quality. To a great extent, top-notch student learning relies on challenging standards and equally challenging teacher learning and performance. As a result, some states and local schools are beginning to raise expectations and supports for teachers in order to raise student achievement levels further. State leaders, policy makers, and educators at all levels are beginning to rethink many practices used to prepare teachers and support their work in the classroom.

Despite these efforts, however,

> the NCES study reveals several contrasts between teachers' needs and the policies and practices found in most states and local schools. . . . New and veteran teachers alike say they do not feel very well prepared to teach effectively to the four fastest changing aspects of the nation's schools—raising standards in the classroom, students with special needs, students from diverse cultural backgrounds, and use of technology. . . . Through this study, teachers are telling us the kinds of support they need and want—more peer collaboration, team teaching, common planning periods. If we don't listen to them, we will shortchange our children and our teachers by hanging on to comfortable but self-defeating practices. (Riley, 1999)

Kentucky was one of the first states to mount a statewide, standards-based educational reform effort, with passage of the Kentucky Education Reform Act (KERA) in 1990. Designed to change the state's entire educational system, KERA addressed curriculum frameworks, performance-based assessments aligned with those frameworks, school-based decision making, and ungraded primary programs, as well as provisions for reforms in governance and finance. In this paper we focus on components of KERA that attended to the improvement of student learning

through curriculum standards, standards-based assessment, and instructional practices. We draw upon multiple data sources to characterize professional development resources for addressing these aspects of the reform, and to consider how the four exemplary schools made use of these resources to work toward the achievement of their student learning goals. (Other components of the Kentucky reform effort, such as school governance and finance, are beyond the scope of this paper.)

Kentucky's Multifaceted Approach to Professional Development

The Kentucky Department of Education (KDE), charged with implementing KERA, seemed to understand the link between educational reform and teacher support. The Department allocated substantial resources to supporting teacher change and designed an extensive professional development program to help educators meet the demands and expectations of the reform agenda. The Kentucky Instructional Results Information System (KIRIS), the statewide assessment system, was to be KDE's primary tool for holding schools accountable for student learning outcomes. And, the multi-faceted professional development program was a central component of its efforts to help schools and teachers achieve the reform goals.

Perhaps the biggest challenge that KDE confronted in providing professional development services, like other services associated with KERA, was geography. Many of Kentucky's school districts are located in remote rural areas, accessible only by mountain roads which are particularly treacherous to travel during the winter months. To help reform efforts reach these districts, the Department established a system of nine regional service centers which housed "resource teachers" and other personnel who provided a wide variety of services to districts, schools, and individual teachers.

These regional centers, while an important starting point, were insufficient. As Edward J. Reidy Jr., former Deputy Commissioner of Education, explained in an interview during our initial visit to Kentucky, "We have a real commitment that what kids learn should not be a function of geography. . . . You could draw a circle around [the regional service] centers. Most of our audited schools were outside those circles and most were poor." To supplement the work of the centers, KDE developed a variety of activities and materials specifically designed to meet the emerging needs of teachers and schools as they worked to achieve KERA goals. This

paper focuses on the two major categories of services: school-based professional development and professional development for mathematics and writing portfolios.

School-Based Professional Development

In keeping with KERA's focus on school-based decision making, the 1994 legislature passed new legislation for professional development which allocated 65% of all state professional development funds directly to school councils, stipulating that, in order to receive these funds, each school must submit an annual plan for its professional development program. These plans are evaluated according to six standards: (a) a clear statement of school or district mission, (b) evidence of representation of all persons affected by the professional development plan, (c) evidence of application of needs assessment analysis, (d) professional development objectives focused on the school or district mission and derived from the needs assessment, (e) a professional development program and implementation strategies designed to support school or district goals and objectives, and (f) a plan that incorporates a process for evaluating professional development experiences and improving professional development initiatives (Daniel & Craig, 1996). This mandate also provides for a minimum of four 6-hour days of professional development and planning activities for the professional staff at every school, without students present.

Professional Development for Mathematics and Writing Portfolios

Mathematics and writing portfolios were undoubtedly one of the most innovative components of KIRIS. Students created their portfolios during their ongoing instructional programs, and teachers were responsible for overseeing student efforts and scoring the completed portfolios. Given this substantial responsibility for teachers, it is not surprising that a separate professional development program focused on student portfolios, with a separate budget, was created and administered by a Portfolio Management Team in the Division of Portfolio Initiatives within the Office of Assessment and Accountability. Over the years of KIRIS implementation, this Division produced numerous documents designed to assist teachers in fulfilling these responsibilities. For mathematics portfolios, for example, their publications included a Kentucky Mathematics Portfolio Teacher's Guide and annual updates, Mathematics Portfolio Sample Task Booklets at the elementary, middle, and high school levels, and booklets on Selecting Appropriate Tasks for the KIRIS Mathematics Portfolio, also at the elementary,

middle, and high school levels. In addition to written materials, the Division produced a series of Kentucky Educational Television (KET) telecasts with associated videotapes on various aspects of portfolio production and scoring.

The Division of Portfolio Initiatives also utilized a trainer-of-trainers model to provide face-to-face professional development for teachers across the Commonwealth. To implement this model, the Portfolio Management Team worked closely with seven paid full-time "resource teachers" in mathematics and writing, each serving one or two regions within the state. In addition, they relied heavily on full-time teachers. For both mathematics and writing portfolios, approximately 27 full-time teachers were identified to serve as "regional coordinators"—one at each educational level (elementary, middle, high) within each of the geographic regions. Approximately 700 "cluster leaders" were directly supported by these regional coordinators and, in turn, provided support for teachers throughout the state. As one example of this model, mathematics portfolio training sessions were held for all mathematics teachers in accountability grades within the state in fall and spring of the 1997-1998 academic year. The KDE Mathematics Portfolio Program team, with the assistance of regional resource teachers, provided training sessions for the regional coordinators. The regional coordinators then provided parallel training for all cluster leaders throughout their regions. Cluster leaders, in turn, were responsible for training all teachers whom they served.

Methods

This research is part of a larger project, The Effects of Standards-Based Assessments on Schools and Classrooms, which examined the impact of Kentucky's educational reform on school and classroom practices. The larger project included both survey and exemplary case study components. This paper focuses on professional development practices and draws only upon the exemplary case study component.

Site Selection and Sample

The schools featured in the exemplary case study component of the project were selected using a multi-step sampling procedure. We began by seeking advice from people familiar with Kentucky's educational reform agenda and its enactment in schools throughout the state. These people included Kentucky Department of Education personnel, regional service center directors, district personnel, and

university faculty members. We generated a list of schools whose names came up repeatedly during these conversations. Members of the research team then made site visits to the schools during which we informally interviewed principals and teachers and observed classroom mathematics and writing instruction. Our final sample of six school—three elementary schools and three middle schools, one each in urban, suburban, and rural areas of Kentucky—was selected on the basis of these site visits. Within each selected school, we identified one writing teacher and one mathematics teacher in the accountability grades (Grades 4 and 7 for writing, Grades 5 and 8 for mathematics). In this presentation, we focus only on the urban and rural sites.

The two rural sites—Bluejay Elementary School and Eagleview Middle School—are located in Eastern Kentucky. The figures for free and reduced lunch, 80% at Bluejay and 70% at Eagleview, are indicators of the high poverty in this remote rural area of the state. The two urban sites—Eastend Elementary School and Mt. Vernon Middle School—are more economically diverse, with approximately 25-30% of their children on free and reduced lunch. Also, as is typical of urban areas within the state, these schools have more racially and ethnically diverse populations than the two rural schools.

Data Collection

Data collection for the exemplary case study component of the project consisted primarily of three 2-day visits to each school in spring 1997, fall 1997, and spring 1998. To gather information on professional development, we conducted extensive semi-structured interviews with the principals and participating teachers, as well as other personnel whose names surfaced as key informants about the topic (e.g., the associate principal at Eastend and the mathematics department chair at Mt. Vernon). A member of the research team also attended a KDE-sponsored portfolio training workshop in fall 1997.

All interviews were audiotaped and transcribed. Observational notes taken during the portfolio training workshop and classroom observations were expanded into detailed field notes immediately after leaving the site. And we collected artifacts related to professional development during all data collection activities including our initial visits to the Kentucky Department of Education and selected regional service centers.

Data Analysis

We developed an initial coding scheme for professional development by drawing upon our knowledge of professional development policies and practices within the state and modified it inductively based on a preliminary analysis of interview data. We used NUD*IST, a computer software program designed specifically for qualitative analysis of text-based data, to code the interview data and generate reports of specific coding categories. These reports were then used to develop focused case studies of professional development at each of the schools. We analyzed these case studies to identify patterns and themes across the schools. These analyses were supplemented with information from the portfolio training workshop and artifacts collected on-site.

Results

In this section we describe professional development practices at the four exemplary schools, focusing primarily on the two categories of services introduced earlier in the paper: school-based use of KERA professional development resources and leadership in the portfolio initiative trainer-of-trainers model. We also look briefly at professional development activities not directly associated with KERA.

School, Teacher and Individual Use of Professional Development Resources

All four exemplary schools had annual plans for their professional development programs that reflected the needs and interests of their faculties. Three of the schools had professional development committees that helped to determine how the four mandatory professional development days would be used and made ongoing decisions about allocation of professional development funds. These committees solicited input from the staff to determine their needs and desires for professional development and made decisions accordingly. As Ms. Mitchell, the associate principal at Eastend, explained, their professional development "has been pretty much on target. I think part of that is because the professional development committee is a pretty large committee, and they really try to get a lot of input and to do a good needs assessment of what the staff feel they need and want. I think because professional development reflects what the staff determines that they need, most of the time it's been pretty beneficial" (AP98S).

Staff needs were similarly taken into account in determining professional development activities at Bluejay, although there was no committee assigned this role. Ms. Chief, the principal, was the catalyst for professional development. She explained, "I conduct a needs assessment each year to see what the faculty feel their needs are for professional development. And I offer them a long list of different professional development activities that could be conducted at our building" (P98S). Each year the list included her ideas as well as ideas from other staff members.

The schools differed in their allocation of resources to school, team, and individual professional development activities. At one extreme, all four professional development days and most of the professional development money at Eastend were allocated to whole-school or team activities. In contrast, at Eagleview, one day was allocated to departments for curriculum work and 1/2 day was allocated to schoolwide portfolio training; the other professional development time, and much of the professional development money, were made available to individuals on the basis of their specific requests. Curriculum alignment and training for portfolio preparation and scoring were the only activities common across the 4 schools; other activities were tailored to the unique needs and interests of each school staff. In this section, we highlight some of the activities to which resources at the four schools were allocated.

School-based portfolio training. In keeping with KDE's trainer-of-trainers model for KIRIS portfolios, the teachers at each school participated in mathematics and writing portfolio training sessions. These sessions—typically 1/2 day in fall and 1/2 day in spring—were offered by the schools' cluster leaders and followed the format and content of training sessions provided by KDE's Portfolio Management Team.

Curriculum alignment. All four schools used some combination of professional development time and money to work on aligning their curricula with the KERA core content standards and developing instructional and assessment activities. Eastend's efforts were the most extensive. There, the school curriculum committee, chaired by the associate principal and composed of teachers representing each team and each subject area, worked to align one curriculum area each summer and to develop associated instructional materials and assessment tools. Ms. Conner, the principal, explained, "We as a school have determined that curriculum is our major goal to work on over this long haul. We've been working on it for quite a few years. We've concentrated on language arts, math, and then science, and the next

area of focus is going to be social studies. And we're still having to evaluate the curriculum as we're using it, to make adjustments and improvement. So I don't know that we'll ever get to a point where we say this is not an area of focus; it probably always will be" (P97F). In summer 1996, for example, the committee revised the mathematics curriculum and developed a mathematics program that includes instructional materials and pre- and posttests for every core content area. As ideas for portfolio prompts and other activities came up during the realignment effort, they were recorded and compiled into big binders, one for each teacher at each grade level. Ms. Nicholl, one of the exemplary teachers in our study, commented on the value of these binders: "That way, you're not having to go out and find 25 things on your own. Everybody's kind of helping out." Ms. Roby, her teammate and the other exemplary teacher in our study, added that as a result of these efforts, "we have a much tighter, more comprehensive math program" (T97S).

Eastend used professional development money to provide summer stipends for teachers who served on the curriculum committee. In addition, the school used professional development time to share the committee's products with the rest of the staff. Ms. Mitchell explained, "We do some sort of in-house professional development whenever we do curriculum alignment, to introduce the staff to the newly aligned curriculum, to give them an opportunity to see the new curriculum, to have some time to think about it and organize it within their complexes [teams] or grade levels. We have them ask questions, provide rationales for the curriculum committee's decisions to go in certain directions, look at recommended instructional units, and those types of things. I think those [meetings] are beneficial" (AP98S). Ms. Nicholl commented about this work, "We have spent, I guess, the past six or seven years revamping the curriculum, aligning the curriculum. . . . We see curriculum alignment as very valuable. . . . That's where the changes are coming down. . . . The changes occur when you're looking at what you're presenting to children" (T97F).

Groups of teachers at Mt. Vernon and Bluejay also spent time in the summer working on curriculum alignment. Further, at Mt. Vernon and Eagleview, teachers received one day of professional development credit for working in subject matter teams to compile books of materials to support instruction on various types of KIRIS-related writing and mathematics tasks. Mr. Bass and his language arts colleagues at Eagleview organized their books of writing materials to correspond to the three types of KIRIS-related writing tasks that students needed to practice (on-

demand, open response, portfolio). Referring to these books as their "stuff books," they spoke of their value as instructional resources.

Mt. Vernon's Tuesday afternoon meetings. Mt. Vernon used a substantial portion of its professional development resources for a unique form of school-level professional development. The school paid its teachers to stay one hour after school, once a week, to participate in schoolwide professional development meetings. These meetings were typically run by Mr. George, the principal, with occasional leadership from other school personnel and external consultants. Mr. George guaranteed to the teachers that the meetings would be no longer than one hour. He maintained that "if you tell the teachers it's only going to last for one hour. . . then it's fine with them. . . . I felt like I've had all their attention and all their cooperation" (P97F).

Mr. George also promised the teachers that the meetings would focus on issues directly related to what they were doing in their classrooms. During the 1996-97 academic year, topics included motivation and the 4-column method of constructing responses to open-response items. In 1997-98 several sessions focused on the state KIRIS rubrics and on scoring student work. Referring to these meetings, Mr. George explained, "Staff development in the school is ongoing. It doesn't happen four times a year. It happens weekly now, and sometimes it happens daily. I think if you want to stay an exemplary school, you have staff development that happens almost daily—working with the weak areas and strengthening the strong areas" (P97F).

Individual use of professional development resources. Most of the professional development resources at Eagleview and Bluejay were allocated to meeting the needs and interests of individual teachers. Ms. Nelson, a teacher at Eagleview, explained, "We have a lot of flexible professional development. Toward the end of the year a couple of people from the board office come around and do surveys and bring us information about trainings that might be useful to us, and we can select from those. Plus we have flexible time. For example KET ran a middle school math series. If I want to just watch those tapes and summarize them, then I can do that for some of my flexible time" (T97F).

Teachers at both schools took advantage of external professional development opportunities that coincided with their interests. Mr. Bass asked for and received support to attend a workshop on revision strategies conducted in Lexington by Barry Lane. The fourth-grade teachers at Bluejay also used professional development funds to attend the Barry Lane workshop, and several other Bluejay

teachers attended the Kentucky Council of Teachers of Mathematics (KCTM) conference, also in Lexington.

At both schools, however, there was a strong commitment to looking within the school for professional development expertise. Mr. Bass typically completed his required professional development hours through work he did with other teachers at the school, such as the stuff books compiled by the team of writing teachers. He preferred to keep his professional development activities "in house" and appreciated the flexibility of a system that allowed him to do this. As he explained, "Who knows us better than we know ourselves? I'm of the opinion that some of the greatest teachers in this state are in this county, and they're doing a lot of neat things. And I think our system allows us to share those ideas with each other" (T97F).

In contrast to Bluejay and Eagleview, there were so many school- and team-level professional development activities at Eastend and Mt. Vernon that the teachers at these schools felt they rarely had the time to take advantage of opportunities offered outside the school walls. Ms. Roby explained, "We have seminars that we can attend monthly that are put on by our county math resource teachers. They have really timely topics and are really quality experiences; they're wonderful. But I have not been able to attend any yet this year" (T97F02). She expressed similar sentiments again in the spring: "With all the things that we're required to do at the intermediate level, we're already two and one-half days over the professional development limit. At some point you have to say, 'I've had enough.' We don't even sign up any more for the things we want to do. There's just x number of hours in the day" (T98S01).

One characteristic common across the four schools was the expectation that teachers share what they learn in the various professional development activities with their colleagues. Ms. Conner expressed this expectation well: "In general, staff members understand that when you go to a professional development activity then you must come back and share what you've learned with the rest of us so we can all benefit from it, if we're using school funds to send you. I think there's an understanding that 'This may be something I'm interested in and I need, but I have an obligation to teach others.' So it's a support both ways" (P97F01).

Leadership in Portfolio Initiative Trainer-of-Trainer Activities

Teachers from all four schools who were participants in our study played some type of leadership role in the Division of Portfolio Initiatives trainer-of-trainer activities. Ms. Roby and Mr. Perry were regional coordinators in mathematics and served on KDE's Mathematics Portfolio Advisory Committee. Ms. Chief was a regional coordinator in writing and served on the Writing Portfolio Advisory Committee. Although not a regional coordinator, Mr. Taylor also served on the Mathematics Portfolio Advisory Committee. And Ms. Crabtree participated in summer workshops on the re-scoring of writing portfolios.

As regional coordinators, Ms. Roby, Mr. Perry and Ms. Chief participated in the portfolio training workshops provided by the Division of Portfolio Initiatives and, in turn, provided training to cluster leaders in their regions. They were also available to cluster leaders and all teachers in their regions when questions about any aspects of portfolio development or scoring arose. In fact, these instructional leaders considered themselves responsible "for keeping the rest of the county up to date as far as what the changes are, what the new standards are for math [and writing] portfolios" (Ms. Roby, T97F02).

These teachers chose to participate in leadership roles so that they could provide the most up-to-date information about KERA and KIRIS to their schools. As Ms. Chief explained, "It's great for me to get that information so quickly. When I go to these meetings, I get back and I get information out to the teachers immediately. I run it off immediately. It's hot off the press. I get to share it and we get to use it fast, which is great compared to the time it takes to go through the channels and get to other teachers" (P97F01). From the beginning of KERA, Ms. Roby and Ms. Nicholl adopted the attitude that they should "jump in there and get as high up on that ladder as we can . . . to get the information first and to help our building." As Ms. Roby explained, for the good of the school, "You've got to get out there. You've got to figure it out" (T97S01).

They also appreciated the fact that, by working at this level, they had input into state-level decisions about KIRIS testing. Referring to the Writing Portfolio Advisory Committee, Ms. Chief explained, "We get to make some really important decisions pertaining to writing. If there are modifications that need to be made on the holistic scoring guide or anything like that, we are the people who get to have some input, to help with it as a committee. Kentucky teachers are actually getting to help with

that. They're actually getting to help compose it, make changes in it when those changes need to be made" (P97F01).

Teachers on the Mathematics Portfolio Advisory Committee also had the opportunity to provide input into policy decisions. Ms. Roby reported that one of their tasks was to "set up the structure for the R&D phases of the math portfolio project" (T97F02). Another component of their role during R&D was "to figure out what we want the new portfolios for Kentucky to look like" (Mr. Taylor, T97F). In addition, the Committee was convened in summer 1997 to try out several different options for scoring portfolios and to develop a recommendation for a revised scoring plan. Ms. Roby described the summer math scoring experience as "unbelievable. We were looking at several different options. Scoring things holistically as a whole folder, or scoring things piece by piece holistically, or scoring things analytically. . . . That was tough. It was really tough. . . . Basically what came out is that we are going to be scoring analytically piece by piece" (T97F). That was the option that the committee preferred.

The workshops were also learning experiences for the teachers. Mr. Taylor reflected, "When you start making those decisions [about scoring] as a large group, then it starts affecting and changing what you're doing in your classroom. So, that's why I consider it professional development—because anything that you're going to go to that affects the way that you teach or the way that you look at something is benefiting you, which is what I think professional development should be" (T97F).

Participation in Professional Development Not Directly Related to KERA

Teachers at all four exemplary sites were involved in professional development activities in addition to than those associated with KERA or KIRIS, to further enhance their growth as educators and educational leaders.

Bluejay was involved with the Kentucky Writing Project. Ms. Chief and Ms. Fit attended a summer institute at Eastern Kentucky University and eventually became trainers for the project. In their role as trainers, they gave professional development workshops for many schools across the state, on topics such as the writing process, writing to learn, and writing across the curriculum. Seven other Bluejay faculty members attended a subsequent summer institute. In addition, the school had written a grant focused on writing, and described themselves as a "writing project school."

Eastend was one of six schools selected to participate in a district science reform project funded by an Eisenhower grant. Eight teachers from Eastend participated in professional development provided by the district. Ms. Mitchell described the project as a trainer-of-trainers model, "What we wrote into our proposal is that these teachers will go to the professional development and will learn to use the materials. In our professional development plan for the fall, these teachers will teach the other teachers at Eastend how to use these materials. Also, because they've been using the materials for a year, they will serve as a role model for the other teachers in their complexes, and they'll be a resource person for their complexes." She added. "We think that [the science reform project] will be very beneficial. . . . Along with our new curriculum that we implemented this year, we'll add on the use of many more hands-on types of science activities. We think that should make a big difference in students' science scores and students' understanding of science. I think we realize that we're doing too much talking about science, and maybe not doing enough science" (AP98S).

Mr. Perry and Mr. Taylor were 2 of approximately 28 teachers throughout Kentucky selected to participate in the Middle School Mathematics Project. Similar in a number of ways to the Kentucky Writing Project, the Middle School Mathematics Project was a three-year project funded as a State Systemic Initiative through the National Science Foundation. The 28 teachers, along with selected university faculty members in mathematics and mathematics education, received stipends to attend workshops for three summers, during which they engaged in mathematics problem solving, discussions about pedagogy, and development of curriculum. They also became part of the Middle School Mathematics Network, which provided them with contacts and support throughout the year.

Conclusions

These descriptions of professional development practices in four exemplary schools provide strong support for the claims of educational scholars such as Fullan (1991), Little (1993), and Sykes (1996) regarding the crucial role of professional development in educational reform. All four schools developed extensive professional development programs to suit the specific needs of their teachers and students. Although these programs differed with respect to characteristics such as their relative emphasis on individual, team, and whole-school activities, they shared a number of features in common.

All four schools used state professional development resources to enhance their instructional programs in areas explicitly connected to KERA. These areas included, but were not limited to, curriculum alignment and development of materials and activities keyed to the core content standards.

Learning from one's colleagues was an explicit characteristic of each school's approach to professional development. Mr. Push, the principal at Eagleview, explained, "Our own people train us. We don't have to get a bunch of people we don't know to come here and train us. We train ourselves." When asked about the advantages of such an approach, he explained, "I think there's more respect. And you know an idea is working because you can go upstairs and see it. The teachers are doing it. They're living it" (P97F). Ms. Chief made a similar comment about professional development at Bluejay: "To be honest with you, for the past two or three years we've done our own professional development. If there's something that we need specifically and we want to invite someone in, we do it. . . . But a lot of it, the great majority of it, we've done ourselves and it's come from things that we need" (P98S). Thus, all four schools capitalized on expertise within their buildings, although they did not limit themselves to drawing upon these internal resources.

Perhaps more important than specific program features or activities, all four schools exhibited a strong commitment to professional development and a belief in the importance of ongoing support for teacher learning. Each school had professional development in place prior to KERA and was able to use the additional resources provided by the state reform to extend and enhance its existing programs. Teachers at each school also served in professional development leadership roles within the state. And, in all cases, these teachers saw their leadership roles as ultimately benefiting their school, their students, and their colleagues, as well as supporting their own professional growth.

Do these stories of four exemplary schools enable us to draw any conclusions about the success of Kentucky's efforts to provide professional development to support its reform agenda? We believe that the answer to this question is "yes." These schools provide "images of the possible" (Shulman, 1983), an existence proof that Kentucky's approach to professional development can provide the resources needed to support systemic educational reform.

To support this claim, we return to the two judgments that Gary Sykes identified as "framing contemporary concern for professional development of

teachers." The first judgment was that "teacher learning must be at the heart of any effort to improve education in our society." Kentucky's reform agenda clearly lives up to this challenge. As William McDiarmid concluded in his report of a study commissioned by KDE to analyze existing professional development resources within the state and offer recommendations for change, "Professional development is not just another dimension of Kentucky's education program. It is the lynch pin. Without it, the vision of new learning for all students cannot be realized. " (McDiarmid, 1995, p. 23)

The second judgment was that "resources devoted to professional development . . . are too meager and their deployment too ineffective to matter." Again, Kentucky lives up to the challenge. The resources allocated to professional development are substantial. Of equal importance, the multifaceted approach to professional development enables the state to address multiple reform goals in an efficient, effective manner. The Division of Portfolio Initiatives' trainer-of-trainers model works to ensure that key elements of the reform agenda reach teachers and students in all corners of the state. And allocation of 65% of the state professional development funds directly to school councils enables each individual school to tailor activities to its specific needs and priorities.

This is not to say that Kentucky's approach to professional development is without problems. In fact, the Kentucky Department of Education continues to question its approach to professional development and seek ways to improve it. For example, at the time this paper was written for presentation at the 1999 annual meeting of the American Educational Research Association, we found the following statement of professional development goals, provided by the Department of Professional Development, posted on the KDE web site (www.kde.state.ky.us):

> For educators to continue making progress in implementing KERA requires rethinking how professional development is designed and how it leads to instructional improvement. The focus will need to shift from workshops and procedures to on-the-job learning and curriculum content. The architects of KERA recognized that reform is a long-term undertaking and that professional development is essential to successful implementation. Shifting the emphasis of professional development to more school-based activities and creating more opportunities for teachers to deepen their curriculum content knowledge similarly requires long-term commitment and attention.

With its existing professional development program and commitment to continuous improvement, Kentucky provides a model for designing professional

development that can effectively support statewide, standards-based educational reform. And, the four schools featured in this paper provide examples of how this support can be used to enact effective, site-specific professional development programs.

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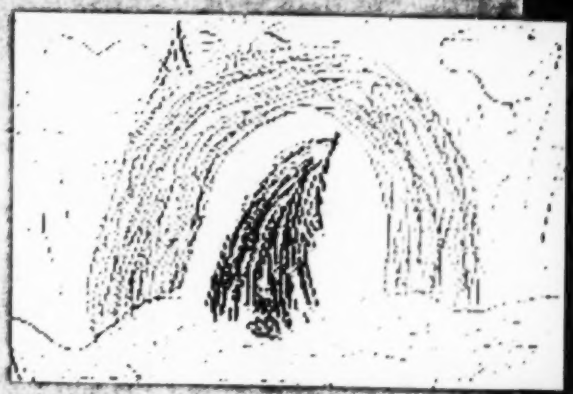

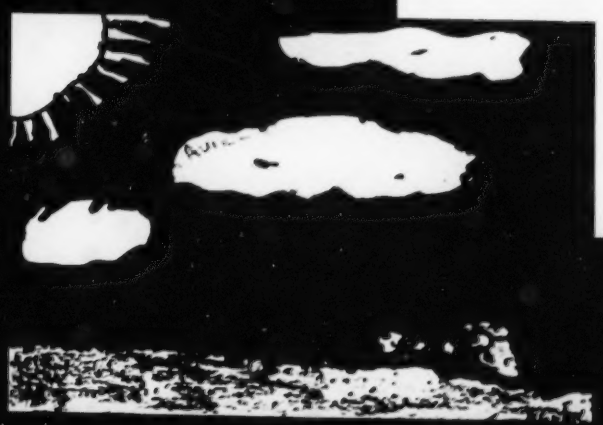

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